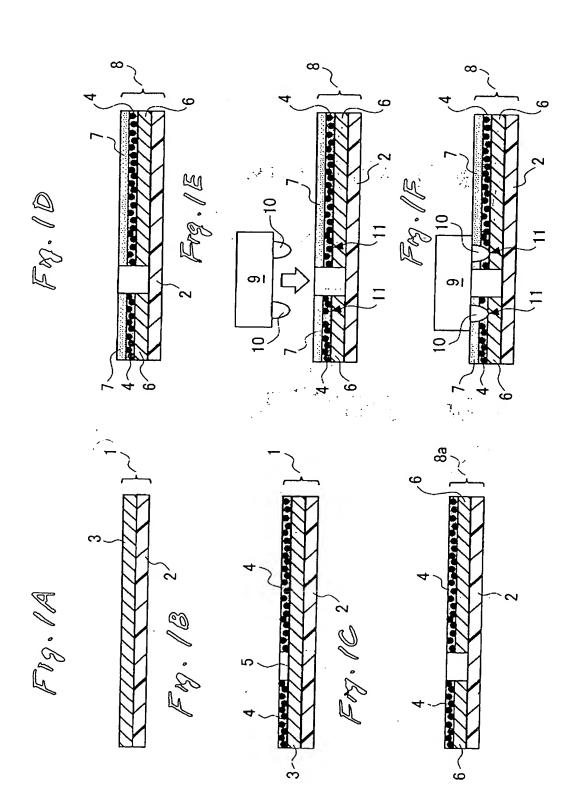
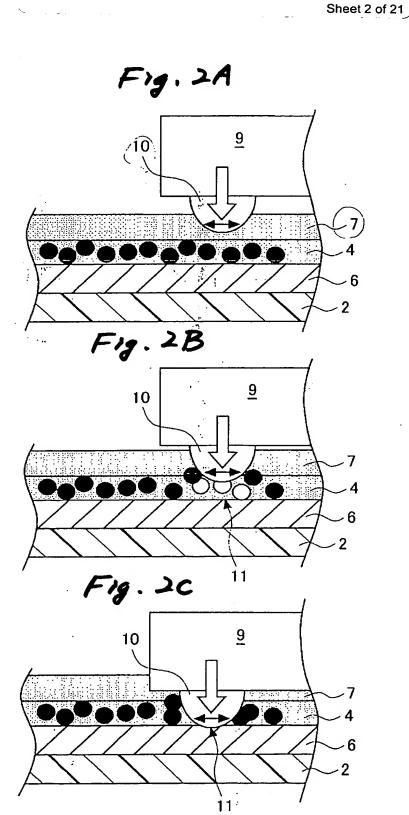
App No.: Not Yet Assigned Docket No.: N0520.0049/Poliventor: Wakahiro Kawai, et al.
Title: MANUFACTURING METHOD FOR ELECTRONIC COMPONENT MODULE AND ELECTROMAGNETICALLY READABLE DATA CARRIER

Sheet 1 of 21



App No.: Not Yet Assigned Docket No.: N0520.0049/P049 Inventor: Wakahiro Kawai, et al.

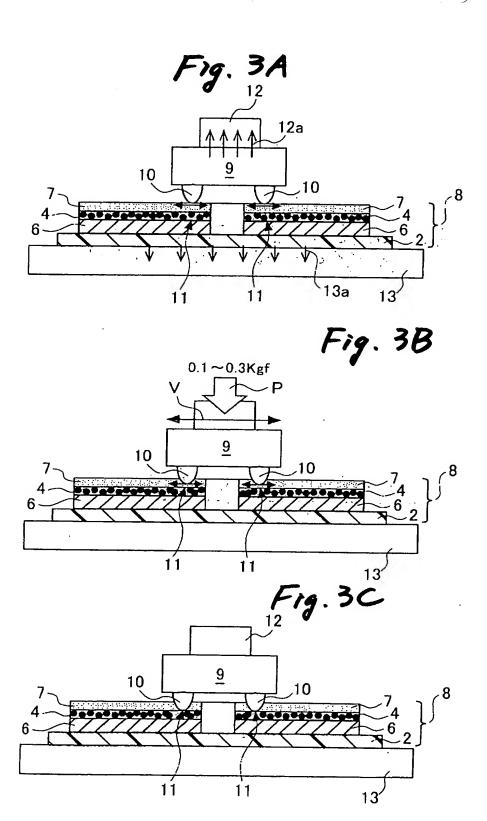
Title: MANUFACTURING METHOD FOR ELECTRONIC COMPONENT MODULE AND ELECTROMAGNETICALLY READABLE DATA CARRIER



App No.: Not Yet Assigned Docket No.: N0520.0049/P049 Inventor: Wakahiro Kawai, et al.

Title: MANUFACTURING METHOD FOR ELECTRONIC COMPONENT MODULE AND ELECTROMAGNETICALLY READABLE DATA CARRIER

Sheet 3 of 21



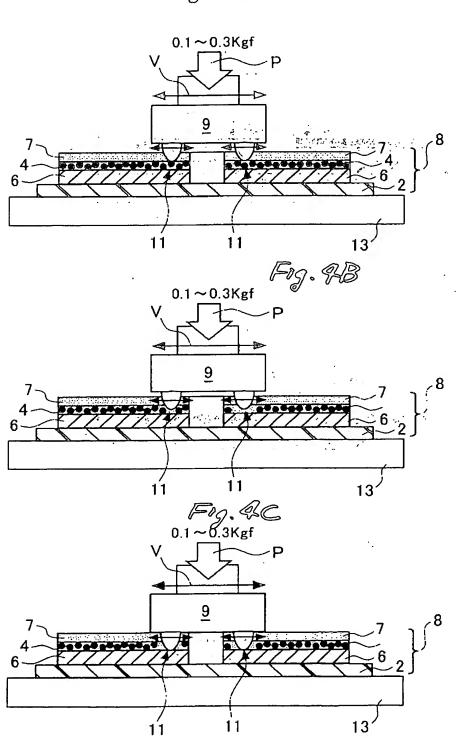
App No.: Not Yet Assigned Inventor: Wakahiro Kawai, et al.

Docket No.: N0520.0049/P049

Title: MANUFACTURING METHOD FOR ELECTRONIC COMPONENT MODULE AND ELECTROMAGNETICALLY READABLE DATA CARRIER

Sheet 4 of 21

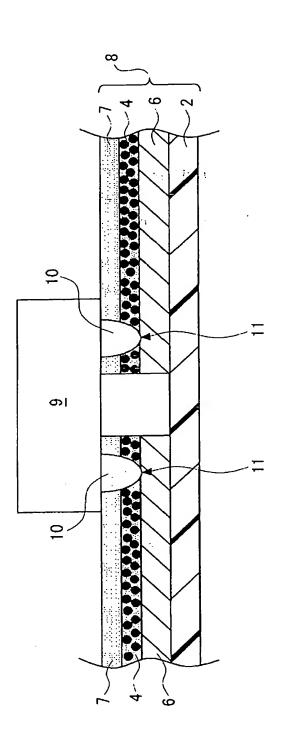
FIG. PA



App No.: Not Yet Assigned Docket No.: N0520.0049/Poliventor: Wakahiro Kawai, et al.

Title: MANUFACTURING METHOD FOR ELECTRONIC COMPONENT MODULE AND ELECTROMAGNETICALLY READABLE DATA CARRIER

Sheet 5 of 21



App No.: Not Yet Assigned Docket No.: N0520.0049/P049

Inventor: Wakahiro Kawai, et al.

Title: MANUFACTURING METHOD FOR ELECTRONIC COMPONENT MODULE AND ELECTROMAGNETICALLY

READABLE DATA CARRIER

Sheet 6 of 21

Fig. 6A

Gemiconductor Mountrag Method	Ultrasenic Bording	Embodiment
Bonding Strength	200~250	1400~1700

Fig. 6B

Semiconductor Mounting Method	Third: Method of the related art	Embodiment
Short-Circuit failure Occurrence Ratio	5 0%	0.0%

App No.: Not Yet Assigned Docket No.: N0520.0049/P049

Inventor: Wakahiro Kawai, et al.

Title: MANUFACTURING METHOD FOR ELECTRONIC COMPONENT MODULE AND ELECTROMAGNETICALLY

READABLE DATA CARRIER

Sheet 7 of 21

Fig. 7A

SiO2 Particles	None	Present (Embodiment)
Semiconductor chip bonding failure (100 tests)	96.0%	0.0%

Frg. 78

SiO2! Partxles	1 ~ 2 μ m	3~4MM (Embodiment)
Semicorductor chip bonding failure (100 tests)	50.0%	0.0%

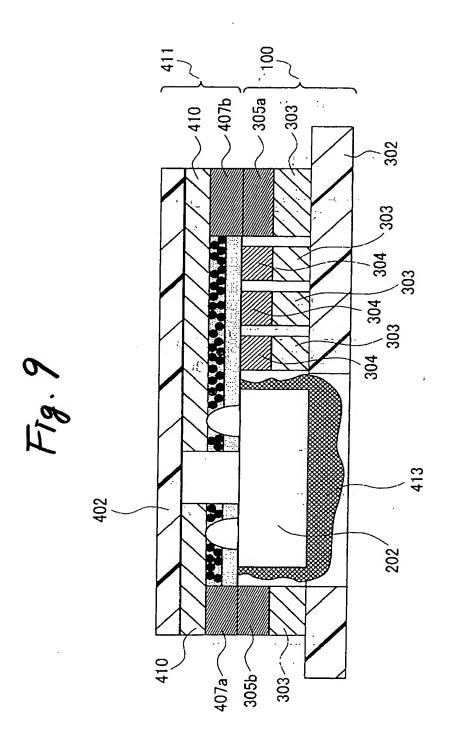
App No.: Not Yet Assigned Docket No.: N0520.0049/P049 Inventor: Wakahiro Kawai, et al.

Title: MANUFACTURING METHOD FOR ELECTRONIC COMPONENT MODULE AND ELECTROMAGNETICALLY READABLE DATA CARRIER

Sheet 8 of 21

App No.: Not Yet Assigned Docket No.: N0520.0049/P Inventor: Wakahiro Kawai, et al.
Title: MANUFACTURING METHOD FOR ELECTRONIC COMPONENT MODULE AND ELECTROMAGNETICALLY READABLE DATA CARRIER

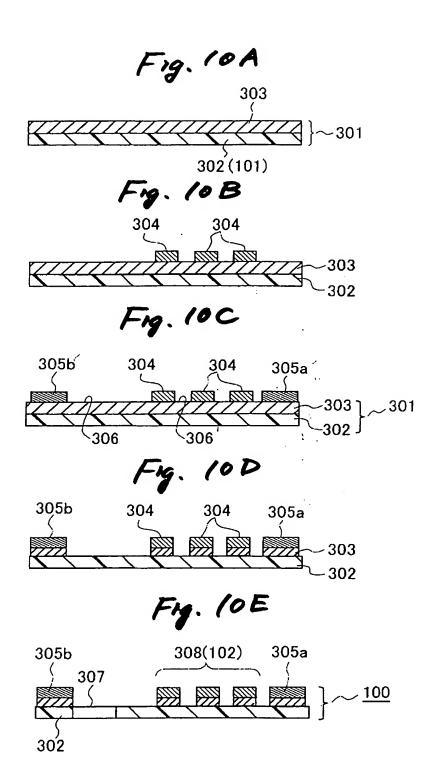
Sheet 9 of 21



App No.: Not Yet Assigned Docket No.: N0520.0049/P049 Inventor: Wakahiro Kawai, et al.

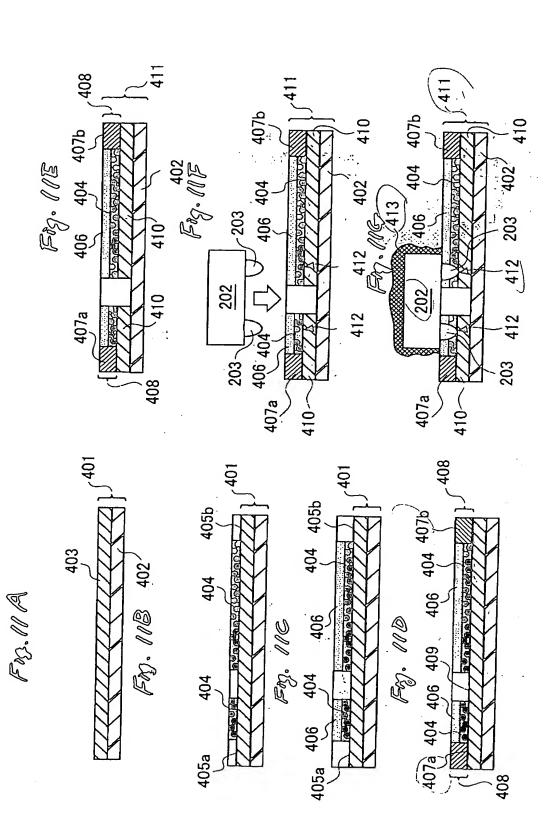
Title: MANUFACTURING METHOD FOR ELECTRONIC COMPONENT MODULE AND ELECTROMAGNETICALLY READABLE DATA CARRIER

Sheet 10 of 21



App No.: Not Yet Assigned Docket No.: N0520.0049/P. Inventor: Wakahiro Kawai, et al. Title: MANUFACTURING METHOD FOR ELECTRONIC COMPONENT MODULE AND ELECTROMAGNETICALLY READABLE DATA CARRIER Docket No.: N0520.0049/P049

Sheet 11 of 21

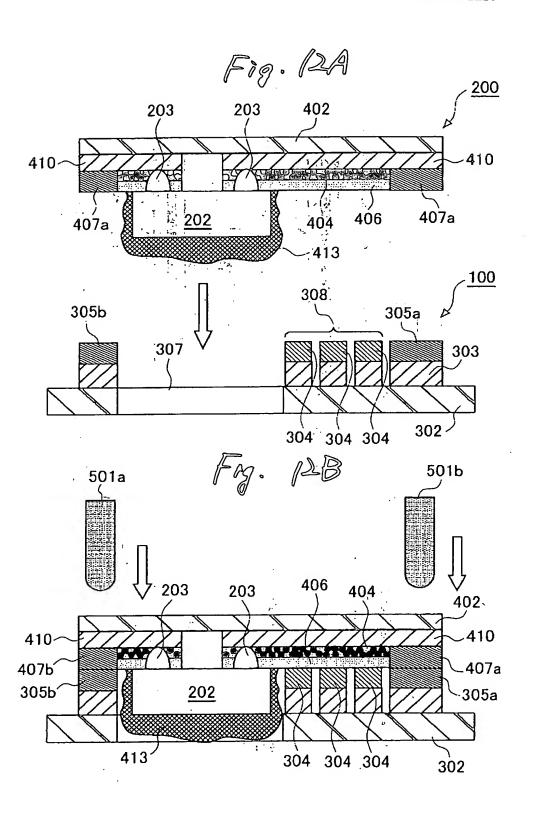


App No.: Not Yet Assigned Docket No.: N0520.0049/P049 Inventor: Wakahiro Kawai, et al.

Title: MANUFACTURING METHOD FOR ELECTRONIC

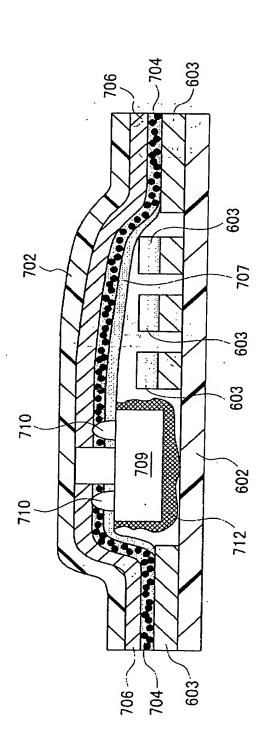
COMPONENT MODULE AND ELECTROMAGNETICALLY
READABLE DATA CARRIER

Sheet 12 of 21



App No.: Not Yet Assigned Docket No.: N0520.0049/Pount Not Yet Assig

Sheet 13 of 21

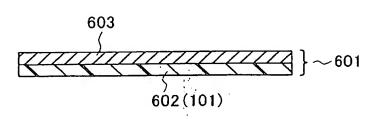


App No.: Not Yet Assigned Docket No.: N0520.0049/P049 Inventor: Wakahiro Kawai, et al.

Title: MANUFACTURING METHOD FOR ELECTRONIC COMPONENT MODULE AND ELECTROMAGNETICALLY READABLE DATA CARRIER

Sheet 14 of 21

Fig. 14A



Frg. 14B

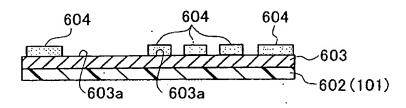
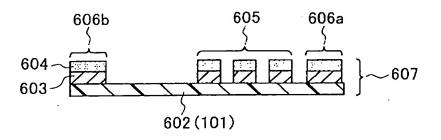


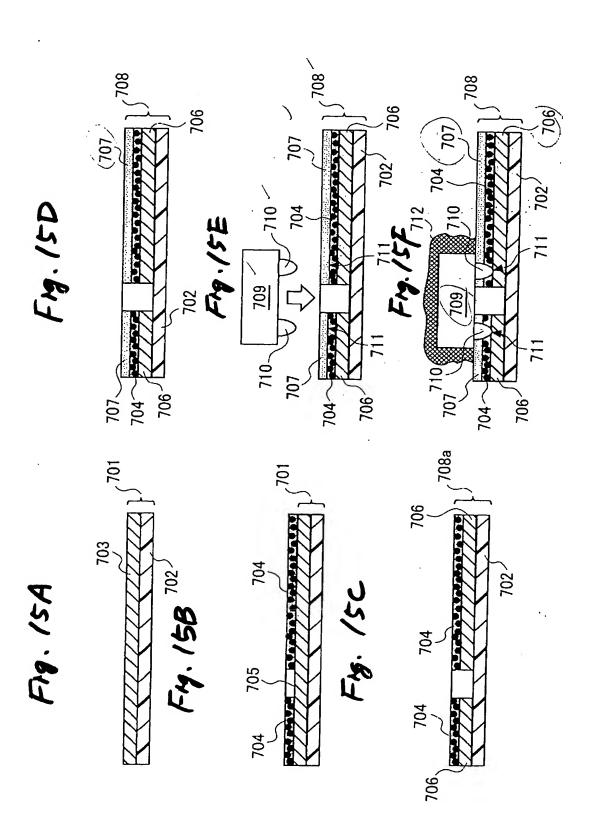
Fig. 14C



App No.: Not Yet Assigned Docket No.: N0520.0049/P049 Inventor: Wakahiro Kawai, t al.

Title: MANUFACTURING METHOD FOR ELECTRONIC COMPONENT MODULE AND ELECTROMAGNETICALLY READABLE DATA CARRIER

Sheet 15 of 21

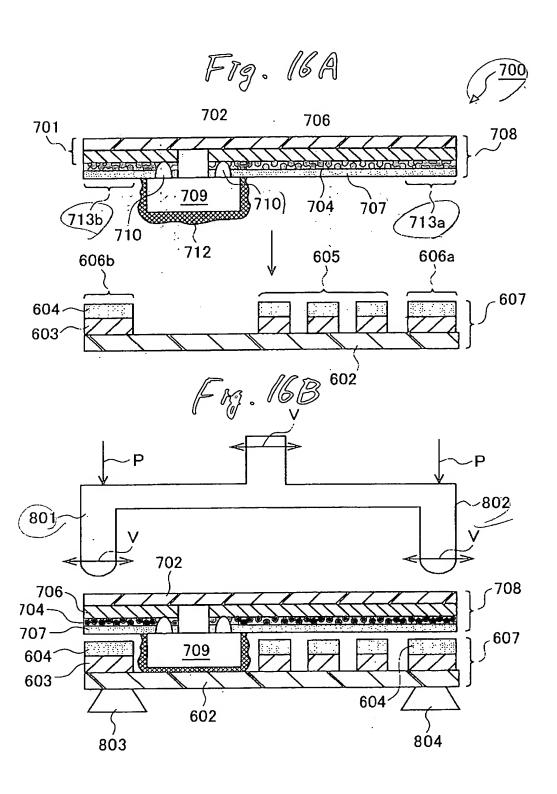


App No.: Not Yet Assigned Inventor: Wakahiro Kawai, et al.

Docket No.: N0520.0049/P049

Title: MANUFACTURING METHOD FOR ELECTRONIC COMPONENT MODULE AND ELECTROMAGNETICALLY READABLE DATA CARRIER

Sheet 16 of 21



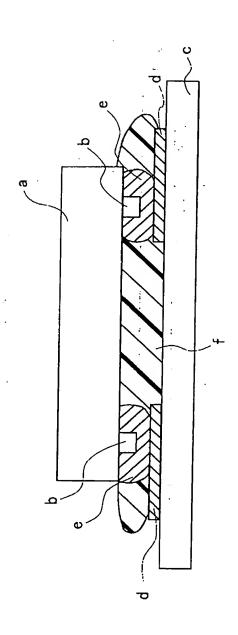
App No.: Not Yet Assigned Inventor: Wakahiro Kawai, et al.

Docket No.: N0520.0049/P049

Title: MANUFACTURING METHOD FOR ELECTRONIC COMPONENT MODULE AND ELECTROMAGNETICALLY

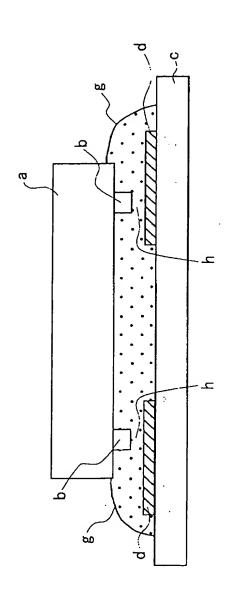
READABLE DATA CARRIER

Sheet_17 of 21



App No.: Not Yet Assigned Docket No.: N0520.0049/P Inventor: Wakahiro Kawai, et al.
Title: MANUFACTURING METHOD FOR ELECTRONIC COMPONENT MODULE AND ELECTROMAGNETICALLY READABLE DATA CARRIER

Sheet 18 of 21



App No.: Not Yet Assigned Docket No.: N0520.0049/P049 Inventor: Wakahiro Kawai, et al.

Title: MANUFACTURING METHOD FOR ELECTRONIC COMPONENT MODULE AND ELECTROMAGNETICALLY READABLE DATA CARRIER

Sheet 19 of 21

5...501 <u>ij</u> 0 0, 2 1

Fig. 19A

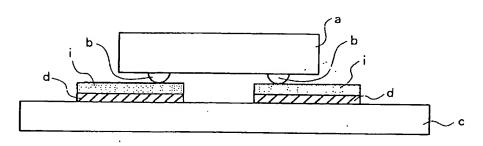


Fig. 19B

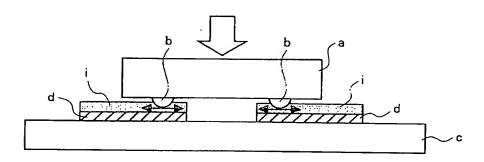
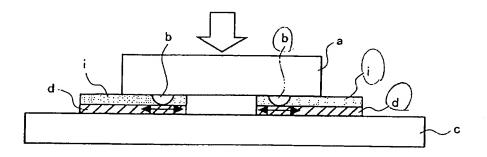


Fig. 19C



App No.: Not Yet Assigned

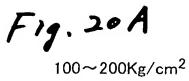
Inventor: Wakahiro Kawai, et al.

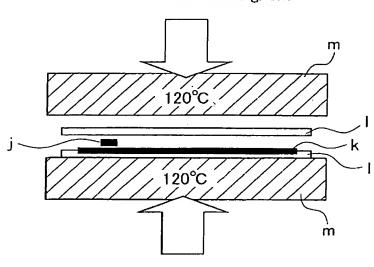
Docket No.: N0520.0049/P049

Title: MANUFACTURING METHOD FOR ELECTRONIC COMPONENT MODULE AND ELECTROMAGNETICALLY

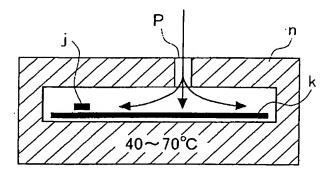
READABLE DATA CARRIER

Sheet 20 of 21





250°C $40\sim80 \text{Kg/mm}^2$



App No.: Not Yet Assigned Inventor: Wakahiro Kawai, et al. Docket No.: N0520.0049/P049

Title: MANUFACTURING METHOD FOR ELECTRONIC COMPONENT MODULE AND ELECTROMAGNETICALLY READABLE DATA CARRIER

Sheet 21 of 21

Fig. 21A

